

# The effects of goal involvement on moral behavior in an experimentally manipulated competitive setting

Sage, Luke; Kavussanu, Maria

## *Citation for published version (Harvard):*

Sage, L & Kavussanu, M 2007, 'The effects of goal involvement on moral behavior in an experimentally manipulated competitive setting', *Journal of sport & exercise psychology*, vol. 29, no. 2, pp. 190-207.  
<<http://journals.humankinetics.com/AcuCustom/SiteName/Documents/DocumentItem/7333.pdf>>

[Link to publication on Research at Birmingham portal](#)

## **General rights**

Unless a licence is specified above, all rights (including copyright and moral rights) in this document are retained by the authors and/or the copyright holders. The express permission of the copyright holder must be obtained for any use of this material other than for purposes permitted by law.

- Users may freely distribute the URL that is used to identify this publication.
- Users may download and/or print one copy of the publication from the University of Birmingham research portal for the purpose of private study or non-commercial research.
- User may use extracts from the document in line with the concept of 'fair dealing' under the Copyright, Designs and Patents Act 1988 (?)
- Users may not further distribute the material nor use it for the purposes of commercial gain.

Where a licence is displayed above, please note the terms and conditions of the licence govern your use of this document.

When citing, please reference the published version.

## **Take down policy**

While the University of Birmingham exercises care and attention in making items available there are rare occasions when an item has been uploaded in error or has been deemed to be commercially or otherwise sensitive.

If you believe that this is the case for this document, please contact [UBIRA@lists.bham.ac.uk](mailto:UBIRA@lists.bham.ac.uk) providing details and we will remove access to the work immediately and investigate.

# The Effects of Goal Involvement on Moral Behavior in an Experimentally Manipulated Competitive Setting

Luke Sage and Maria Kavussanu  
University of Birmingham

In this experiment we examined the effects of task and ego involvement on three measures of moral behavior—prosocial choice, observed prosocial behavior, and observed antisocial behavior—in a competitive setting. We also investigated sex differences in moral behavior. Male ( $n = 48$ ) and female ( $n = 48$ ) college students were randomly assigned to a task-involving, an ego-involving, or a control condition. Participants played two 10-min games of table soccer and completed measures of prosocial choice, goal involvement, goal orientation, and demographics. The two games were recorded, and frequencies of prosocial and antisocial behavior were coded. Players assigned to the task-involving condition were higher in prosocial choice than those in the ego-involving or control conditions. Individuals in the ego-involving condition displayed more antisocial behaviors than those in the task-involving or control conditions. Finally, females displayed more prosocial behaviors than males.

**Key Words:** task involvement, ego involvement, prosocial behavior, antisocial behavior, competition

Competitive settings can be pivotal in determining participants' behavior. When a competitive dichotomy of winning and losing is emphasized, competitors are likely to engage in negative social behaviors. Indeed, research has shown that in competitive sport environments behaviors such as cheating, breaking the rules, and intentionally injuring an opponent are not uncommon (e.g., Kavussanu, Seal, & Phillips, 2006). However, the popular belief that sport builds character suggests that competition may also support positive social behaviors. Identifying the characteristics of competitive settings that are associated with positive and negative social behaviors is vital in promoting the type of social moral conduct that can benefit the majority of participants.

Social cognitive theory of moral thought and action (Bandura, 1991) provides the framework for the moral variables examined in this study. In this theory the focus is on behaviors that can be directly observed. Although intention plays a

role in Bandura's theory, intention is not the decisive definer of moral conduct. A behavior is defined as moral based on its consequences. For example, the act of helping an opponent off the floor would be regarded as moral because it has positive consequences for the recipient. Thus, the reasons or motives for performing the behavior are not considered in defining a behavior as moral.

Bandura (1999) has also distinguished between proactive and inhibitive aspects of morality. Proactive morality is manifested by engaging in positive behaviors that benefit others. Inhibitive morality is manifested by *refraining* to engage in behaviors that are detrimental to others. The inhibitive aspect of morality is also positive in that it prevents harm. In the present study, both aspects of morality were examined, and the terms *prosocial behavior* and *antisocial behavior* were used to refer to the proactive and inhibitive aspects, respectively. Examples of prosocial behavior in sport are helping, sharing equipment, and congratulating an opponent, whereas examples of antisocial acts are using abusive language, deliberately cheating, and breaking the rules. A high level of morality is manifested when one engages in prosocial behaviors and/or refrains from engaging in antisocial behaviors.

Although moral behavior includes both proactive and inhibitive dimensions, sports psychology research has primarily focused on the inhibitive aspect of morality. Typically, high levels of morality have been inferred from low reported frequencies of negative behaviors such as faking an injury, pushing, and intentionally injuring an opponent (e.g., Kavussanu & Roberts, 2001; Ommundsen, Roberts, Lemyre, & Treasure, 2003). More recently, research has started to examine *both* aspects of morality by investigating prosocial and antisocial behavior in sport (Kavussanu, 2006; Kavussanu et al., 2006; Sage, Kavussanu, & Duda, 2006). These studies have shown that both prosocial and antisocial behaviors occur in sport, and these behaviors are independent of each other; that is, high levels of prosocial behavior do not necessarily imply low levels of antisocial action. Therefore, both prosocial and antisocial behaviors need to be considered to fully understand moral behavior in sport.

A second issue of past research concerns the measurement of moral behavior. In previous studies, moral behavior has been primarily examined based on athletes' self-reports (e.g., Kavussanu & Roberts, 2001; Ommundsen et al., 2003; Sage et al., 2006). However, subjective reports of moral behavior are likely to be influenced by social desirability. Although in some studies the researchers have controlled for social desirability (e.g., Kavussanu & Ntoumanis, 2003; Sage et al., 2006), this work has used measures of social desirability that often display low reliability. To date, very few studies have investigated observed moral behavior in sport. In this work, both prosocial and antisocial behaviors were recorded (Kavussanu et al., 2006) or aggressive behaviors were coded (e.g., Jones, Bray, & Olivier, 2005; Kirker, Tenenbaum, & Mattson, 2000; Sheldon & Aimar, 2001). Although some of these studies have examined aggressive behavior, aggression can be conceptualized and investigated as a moral issue (see Bredemeier, 1983). In these studies, a high frequency of aggressive behaviors would indicate low levels of inhibitive morality. The dearth of research on observed moral behavior as well as the limitation of self-reports highlight the need to investigate actual moral behavior in sport.

A third issue of past research is the methodology employed to examine moral behavior in physical activity contexts. With the exception of a few intervention studies (e.g., Bredemeier, Weiss, Shields, & Cooper, 1986; Gibbons & Ebbeck,

1997; Gibbons, Ebbeck, & Weiss, 1995), in the majority of past work, moral behavior has been examined using cross-sectional designs (e.g., Kavussanu & Ntoumanis, 2003; Kavussanu & Roberts, 2001; Miller, Roberts, & Ommundsen, 2004; Ommundsen et al., 2003). These designs, however, limit conclusions on cause and effect relationships. To address this limitation, experimental studies are needed. The present study examined actual prosocial and antisocial behaviors in an experimentally manipulated competitive setting akin to sport.

Recently, many studies examining moral issues in competitive sport have centered on the link between achievement motivation and morality (e.g., Kavussanu, 2006; Kavussanu & Roberts, 2001; Lemyre, Roberts, & Ommundsen, 2002; Miller et al., 2004). Research has largely been guided by achievement goal theory (Nicholls, 1989). A main premise of this theory is that individuals engage in achievement contexts to demonstrate competence. The theory also distinguishes between two states of motivational involvement (Nicholls, 1989): task involvement and ego involvement. These states reflect different criteria for defining success and evaluating competence and different goals adopted by the participants. In task involvement, individuals define success and evaluate competence using self-referenced criteria and their goal is to learn something new, improve skills, or master a task. In ego involvement, individuals define success and evaluate competence in relation to others and their goal is to outperform others. These two states of involvement represent the regulators of achievement behavior and are influenced by task and ego goal orientation. Goal orientation is the tendency to be task or ego involved in a given achievement context (Nicholls, 1989).

Nicholls (1989) proposed that an individual's goal orientation may have implications for his or her behavior toward others. Specifically, the focus on demonstrating superiority over others that characterizes ego-oriented people may result in a lack of concern about justice, fairness, and the welfare of opponents in a competitive setting (Nicholls, 1989). In contrast, individuals high in task orientation are expected to want to play by the rules and experience a fair competition (see Duda, Olson, & Templin, 1991). Empirical research has largely supported these predictions. Ego orientation has been linked to attitudes toward unsportsmanlike play (Duda et al., 1991); approval of intentionally injurious acts (Dunn & Causgrove Dunn, 1999); low levels of moral judgment, intention, and behavior (Kavussanu & Ntoumanis, 2003; Kavussanu & Roberts, 2001); low levels of sportspersonship (Lemyre et al., 2002); and antisocial judgment and behavior (Sage et al., 2006). In contrast, task orientation has been associated with some dimensions of sportspersonship (Dunn & Causgrove Dunn, 1999; Lemyre et al., 2002), high levels of moral functioning (Kavussanu & Ntoumanis, 2003), and prosocial behavior (Kavussanu, 2006).

A second influence on task and ego involvement is the situational goal structure, or motivational climate (Ames, 1992). The motivational climate of a context is created by significant others (i.e., coaches, parents, or teachers), who emphasize different criteria for success through reinforcement, feedback, rewards, and other means (Ames, 1992). Two types of motivational climate have been described and labeled *mastery*, or *task-involving*, and *performance*, or *ego-involving* (Ames, 1992; Ames & Archer, 1988; Newton, Duda, & Yin, 2000). A mastery climate is prevalent when significant others reinforce learning and personal improvement, whereas a performance climate is salient when significant others emphasize normative success and reward athletes with high ability. Although the motivational climate is created

by significant others, individuals in the same team vary in their perceptions of the climate (see Ames, 1992). Therefore, in sport psychological research, participants' *perceptions* of the climate have been typically measured (e.g., Kavussanu, Roberts, & Ntoumanis, 2002; Newton et al., 2000). Perceived mastery and performance motivational climates facilitate task and ego involvement, respectively (Ames, 1992; Nicholls, 1989) and have been the focus of recent research on morality in sport (e.g., Miller et al., 2004; Ommundsen et al., 2003).

Empirical evidence supports links between perceived motivational climate and moral variables in sport. Specifically, perceptions of a high mastery climate in one's team have been positively associated with prosocial behavior (Kavussanu, 2006) and sportspersonship (Gano-Overway, Guivernau, Magyar, Waldron, & Ewing, 2005; Miller et al., 2004; Ommundsen et al., 2003) but inversely linked with attitudes toward rough play (Boixadós, Cruz, Torregrosa, & Valiente, 2004). In contrast, athletes' perceptions of a performance motivational climate have corresponded to antisocial behavior (Kavussanu, 2006) and low levels of sportspersonship (Miller et al., 2004; Ommundsen et al., 2003). In comparisons of perceived motivational climate profiles, the low mastery and high performance group reported the strongest approval of amoral behavior (e.g., Ommundsen et al., 2003). Finally, a perceived performance climate corresponded to low levels of moral functioning in youth soccer players (Kavussanu & Spray, 2006). Overall, the evidence suggests that perceived motivational climate has implications for morality in sport.

Generally, the extant literature indicates that goal orientations and motivational climates are related to a variety of moral variables. As mentioned earlier, goal orientations are dispositional tendencies to adopt particular achievement goals in specific situations. Motivational climate represents the social environmental influence on the adoption of these goals. However, the direct regulators of behavior in a given achievement context are the achievement goals adopted in that context (see Elliot, 2005; Nicholls, 1989), that is, task and ego involvement. Despite this, researchers examining motivation and morality in sport from an achievement goal perspective have investigated only the effects of dispositional and/or environmental motivational variables on morality. No study has examined the effects of *situational* motivation (i.e., task and ego involvement) on moral behavior in a competitive setting.

The investigation of the effects of goal involvement on moral behavior is important for an additional reason: To understand the motivation of *actual* moral behaviors, these behaviors need to be observed in a *specific* situation. This will enable the examination of the effects of situational motivation on moral behavior and will substantially enhance our ability to predict actual behaviors. Indeed, past literature suggests that prediction is maximized when the independent and dependent variables are measured at the same level (see Ajzen & Fishbein, 1977; Vallerand, 1997). Thus, it is important to investigate the effects of task and ego involvement, representing situational motivation, on moral behavior observed in a specific situation.

When examining moral behavior, an important variable that should be considered is participants' sex: Sex differences on moral variables have been consistently identified in past research. Specifically, in past work, males were higher than females in aggressive tendencies (Bredemeier, 1994) and unsportsmanlike attitudes (Duda et al., 1991) and more likely to judge injurious acts as legitimate (Duda et al., 1991; Kavussanu & Roberts, 2001). Males also scored lower than females in indices of

moral functioning (Kavussanu & Roberts, 2001), maturity of moral reasoning (Bredemeier & Shields, 1986), and prosocial behavior (Kleiber & Roberts, 1981). Finally, males tend to be higher in ego and lower in task orientation than females (e.g., Duda et al., 1991; Kavussanu & Roberts, 2001). Owing to the sex differences identified in both motivational and moral variables in past research, some authors have proposed that the different goal orientations held by males and females may *partly* explain these differences (e.g., Duda et al., 1991; Kavussanu & Roberts, 2001). Thus, it is important to examine sex differences on moral variables and consider the role of goal orientations when examining these differences.

In summary, researchers investigating motivation and moral behavior in sport have (a) focused primarily on negative social behaviors, (b) relied mainly on self-reports, and (c) investigated goal orientation and motivational climate in relation to moral behavior using cross-sectional designs. In this study we sought to address these limitations by examining the effects of goal involvement on three measures of moral behavior, namely, prosocial choice, observed prosocial behavior, and observed antisocial behavior in an experimentally manipulated competitive setting. We used table soccer to create the competitive setting because of the opportunities this game presents for moral behavior, its suitability to the limited laboratory space, and its characteristics that are comparable to organized sport (i.e., direct competition with opposition and involvement of physical skills). We hypothesized that task involvement would lead to higher prosocial choice, more prosocial behaviors, and less antisocial behaviors than ego involvement. We also examined sex differences in moral behavior and expected that female competitors would score higher in prosocial choice and engage in more prosocial and less antisocial behaviors than males. Finally, we anticipated that any sex differences would be accounted for by goal orientation.

## Method

### Participants

A total of 96 participants completed the experiment. However, data from only 90 people (45 males and 45 females) were included in the analyses. Four participants were excluded due to incomplete observation data, and two participants were excluded because they were identified as multivariate outliers in preliminary analysis (see Results section). Participants' mean age was 21.5 years ( $SD = 5.01$  years), and they were recruited from sport and exercise science courses at a British university. The sample was predominantly white Caucasian ( $n = 82$ ), with the remainder coming from Asian ( $n = 4$ ), black African ( $n = 1$ ), and mixed race ( $n = 3$ ) backgrounds. Students participated competitively in a range of sports ( $n = 20$ ) and had an average sport experience of 9.23 years ( $SD = 5.02$  years). Finally, participants reported playing table soccer on average one to two times per year.

### Equipment

The equipment used was a soccer table and a video camera. The soccer table was a Garlando G-500 that included 11 playing figures per team and two goals. A timer, two scoring counters, and 10 balls were also used. The balls were dispensed at either

end of the table and entered into play via two chutes, situated at either side of the half-way line. A digital video camera was used to record behavior. The camera was situated behind a two-way mirror so that participants were unaware that they were being filmed. The camera was operated by remote control. A hidden microphone was placed under the table.

## Measures

**Prosocial Choice.** Prosocial choice was measured using the Social Behavior Scale (SBS; Knight & Kagen, 1977), which assesses behaviors of altruism and equality versus rivalry and superiority. The measure provides a continuum of four choices that differ in the outcomes they provide and the social motives they satisfy. In this study the outcome was the accumulation of bonus goals for the participant and the opponent. Players were informed that bonus goals would be added to their final goal total, which would lead to the award of raffle tickets for use in a £50 cash-prize draw.

When completing the SBS, participants were asked to make a confidential decision on a continuum of four choices. In all choices, the participant allocated the same number of bonus goals to him- or herself. The choices differed on the number of goals the participant allocated to the opponent. This number corresponded to the score assigned to each choice. Thus, the first choice allocated one goal to the opponent and received a score of 1; the second choice allocated two goals and received a score of 2; the third choice allocated three goals and received a score of 3; and the fourth choice allocated four goals and received a score of 4. The four choices represented rivalry and superiority, superiority, equality, and altruism and group enhancement for Choices 1, 2, 3, and 4, respectively. The choices were clearly marked on an A4-sized (210 × 297 mm) poster. Participants were handed four cards representing the four choices and were asked to give the experimenter the card indicating their choice. The presentation of the four choices marked on the poster was reversed in half the trials to control for response bias.

**Observed Prosocial and Antisocial Behaviors.** Visual and auditory videotaped information from two 10-min games of table soccer was coded to assess observed prosocial and antisocial behaviors. The coding of observed behaviors was conducted using the standard method of video playback (e.g., Jones et al., 2005). First, a short list was created of all the behaviors in table soccer that were consistent with our definitions of prosocial and antisocial behavior. Prosocial behavior was defined as voluntary action intended to benefit another individual (Eisenberg & Fabes, 1998), whereas antisocial behavior was defined as voluntary action intended to harm or disadvantage the recipient (Sage et al., 2006). In these definitions, *intent* refers to the goal of the behavior rather than the intentions or motives of the person. Independent judges ( $N = 12$ ) with regular experience of table soccer (minimum of one game per week) were provided with these definitions and asked to classify the provisional list as prosocial, antisocial, or neither. Behaviors that gained a 90% and above inter-rater agreement on their classification rating were retained for subsequent coding. From an original list of 23 behaviors, 20 were retained.

A standard observation form that included the 20 behaviors was used to record behavior frequencies. Behaviors were classified as prosocial or antisocial, and these were further subdivided into verbal and physical categories to facilitate scoring.

Written definitions of all behaviors were included on a separate sheet to ensure objective recording and minimize disagreement among observers. Three observers, who were blind to the experimental condition, recorded all incidents of the listed prosocial and antisocial behaviors for each participant that they observed. First, a principal observer viewed all videotaped games and tallied behaviors under their respective categories. Then, two other independent observers were informed of the purposes of the study, provided with observation forms and definitions of the 20 behaviors, and given instruction on the scoring procedure. After a practice run, when the principal observer was present to clarify ambiguity, three more random test sessions were scored. Scores from the three observers were compared using intraclass correlation coefficient, which was .97.

A list of all recorded behaviors appears in Table 1. This table also presents mean frequencies of prosocial and antisocial verbal and physical behaviors across the two games as a function of experimental condition. As a large number of different prosocial and antisocial behaviors were recorded, one composite score was computed for all prosocial behaviors and one for all antisocial behaviors. These scores were used in the main data analyses. We chose this strategy for the presentation of results because (a) we were primarily interested in overall behaviors rather than the subcategories and (b) we had no theoretical reason to expect that findings would be different for the physical and verbal behaviors.

**Goal Orientation.** Task and ego goal orientations were measured using the Perception of Success Questionnaire (POSQ; Roberts, Treasure, & Balague, 1998). The POSQ consists of 12 sport-specific items that start with the stem "When playing sport I feel most successful when. . ." The scale includes two 6-item subscales measuring task orientation (e.g., "I show clear personal improvement") and ego orientation (e.g., "I outperform my opponents"). Participants respond on a Likert scale anchored by the scores of 1 (*strongly disagree*) and 5 (*strongly agree*). Mean scores for the two subscales were calculated and used in the analysis. The POSQ has demonstrated high internal consistency, with alpha coefficients of .88 for both the task and ego scales (Roberts et al., 1998).

**Goal Involvement.** We used an adapted 14-item questionnaire (Standage, Duda, & Pensgaard, 2005) to assess the degree to which participants found the experimental setting to be task involving (7 items; e.g., "trying hard to improve was important") and ego involving (7 items; e.g., "doing better than other players was important"). Using the stem "In today's experiment..." responses were made on a five-point Likert scale anchored by 1 (*strongly disagree*) and 5 (*strongly agree*). Mean scores for each subscale were calculated and used in the analysis. The two subscales had high internal consistency, with alpha coefficients of .86 for task and .90 for ego involvement.

## Manipulations

Three conditions were used in this study: a task-involving condition, an ego-involving condition, and a control condition. The manipulations for all conditions were presented through a Microsoft PowerPoint slide show containing 16 slides. The timing of the slides was automated to standardize the length of each presentation while allowing ample time to absorb the information. The three conditions also included a description of three rules officially recognized by the International Table Soccer Federation: first, no spinning of the rods with spinning defined as



**Table 1 Mean Frequencies of Prosocial and Antisocial Behaviors as a Function of Experimental Condition (*N* = 90)**

Observed behaviors	Experimental condition		
	Task involving <i>M ± SD</i>	Ego involving <i>M ± SD</i>	Control <i>M ± SD</i>
<b>Prosocial physical</b>			
Handing ball to opponent after goal / dead ball / leaving table	0.47 ± 0.97	0.17 ± 0.38	0.27 ± 0.58
Allowing an illegal goal	0.17 ± 0.53	0.03 ± 0.18	0.40 ± 1.45
Shaking hands / applauding opponent	0.13 ± 0.35	0.07 ± 0.25	0.00 ± 0.00
Moving on opponent's goal counter	0.20 ± 0.76	0.17 ± 0.65	0.63 ± 1.90
<b>Prosocial verbal</b>			
Friendly discussion / joking and laughing with opponent	1.67 ± 0.61	1.17 ± 0.59	1.47 ± 0.78
Congratulating / encouraging / instructing opponent	2.90 ± 3.03	2.73 ± 2.20	2.07 ± 2.50
Calling own foul / declining foul / apologizing / thanking	0.70 ± 1.18	0.67 ± 1.02	1.03 ± 2.22
Alerting opponent to missed goal counts	0.13 ± 0.35	0.17 ± 0.59	0.10 ± 0.31
<b>Antisocial physical</b>			
Breaking of rules	1.03 ± 1.00	1.93 ± 2.67	1.07 ± 1.28
Displays of anger / Abuse of table	0.33 ± 1.06	1.03 ± 1.52	0.30 ± 0.65
Serving ball out of turn or when opponent not ready	0.60 ± 1.33	1.53 ± 2.30	1.33 ± 3.01
Deliberate cheating, e.g., over-counting of goals	0.03 ± 0.18	0.03 ± 0.18	0.10 ± 0.31
<b>Antisocial verbal</b>			
Winding up / taunting / sledging opponent	0.83 ± 1.80	1.67 ± 2.82	0.83 ± 1.32
Abusive language	0.73 ± 1.17	1.23 ± 2.76	0.80 ± 1.49
Arguing	0.03 ± 1.18	0.17 ± 0.38	0.23 ± 0.57

more than a 360° rotation of the molded players before or after contact with the ball; second, no jarring, sliding, or lifting of the table; third, no handling of the ball within the playing area unless the ball goes dead, in which case both players had to agree that it was unplayable before picking it up. On the first violation of these rules, the offending player had to forfeit possession of the ball, and, on the second, he or she had to give away a free attempt on goal. Finally, players were informed that they were responsible for officiating on play. The content of the three manipulations is detailed below.

**Task-Involving Condition.** The title slide for the task-involving condition was the Table Soccer Challenge. As the goal of task-involved individuals is to learn and improve, participants were invited to take part in a challenge to learn three skills. The skills of passing, controlling, and kicking in table soccer were introduced, and instruction was given on how to *improve* these skills. Still images of recommended hand positions and grips for the different skills were included. Emphasis was on learning and individual improvement on the three skills at a personal pace. Instruction on each skill also included a short video clip that demonstrated an expert executing that skill in real time and slow motion. Another video clip showed all the skills together in sequence. Finally, players were informed that skill improvement would be rewarded with one raffle ticket for use in a £50 cash-prize draw. Improvement was measured by an increase in goals scored from Game 1 to Game 2. The reward aimed to strengthen the focus on personal improvement thereby facilitating task involvement. Two slides were presented between Games 1 and 2 to refresh the manipulation. The first slide emphasized personal improvement and effort. The second slide provided instruction on the skills of passing, trapping, and kicking.

**Ego-Involving Condition.** The introductory slide for the ego-involving condition was the Table Soccer Competition. As the goal of ego-involved individuals is to outperform others, the focus was on outscoring the opponent and competitors from other testing sessions. Players were informed that their scores would be displayed on the school's Web page and notice board. A standardized leader board displayed a fictional top ten of total goals scored for each sex and was placed on a white board next to the table soccer. Three tips were presented on how to outperform opponents: watching the time, forcing the ball toward goal by any means possible, and trying to surpass the skills and goals seen in the video demonstrations. Unlike the task-involving condition, for which the videos were presented as an expert performing some skills to practice at a personal pace, in the ego-involving condition participants were encouraged to outperform the expert. Players were informed that they could receive raffle tickets for entering a £50 prize draw by gaining a greater total goal tally than their opponent and by making it onto the all-time top-ten leader board. It was emphasized that higher positions on the leader board would receive more raffle tickets. Between Games 1 and 2, two additional slides were presented to refresh the manipulation. The first slide emphasized the need to outperform opponents in order to succeed. The second slide reviewed the three tips and reminded participants that all scores would be publicized.

**Control Condition.** The control condition was titled A Background to Table Soccer. Slides included a history of table soccer and the Garlando brand of tables, together with still images of the various table models. The information presented was exclusively factual and made no reference to learning, outperforming opponents, or other factors that could influence the players' motivational state.

## Procedure

Volunteers attended a 45-min laboratory session. Pairs of players, matched for sex to minimize between-sex self-presentation concerns (Jones & Pittman, 1982), were randomly assigned to one of the three conditions. Participants received written

instructions about the procedure and a brief verbal explanation of the sequence of events. Upon completion of a consent form, participants sat in front of a computer monitor. A slide show presented the manipulation and the rules of the game. After verbal checks on the clarity of the procedure, players were allowed 5 min of practice followed by two 10-min games of table soccer.

Before Game 1, participants were informed that the experimenter would not be present during game play because his presence could influence their behavior. The video camera was then set to record by remote control. Participants were unaware that they were being filmed. The countdown timer started, and the experimenter left the room. Once 10 min had elapsed, the alarm on the timer signified the end of Game 1 and the experimenter returned to the laboratory. Participants were then presented with a 2-min summary of the main points from the previous slides. As with Game 1, the timer started, and the experimenter left the room for the start of Game 2. Two games were included to allow a break to refresh the manipulation.

At the end of Game 2, the SBS was presented to participants as an opportunity to gain bonus goals for themselves and their opponent. Players were told that the total goals scored would count toward raffle tickets to be entered in a £50 cash-prize draw. The presence of the reward was essential for providing bonus goals with some value and consequently giving meaning to the choices made on the SBS. For example, the altruistic choice of giving more bonus goals to the opponent than to oneself (score of 4) only has meaning if there is some value or reward associated with these goals. Each participant was asked to confidentially choose one of four alternatives by handing the experimenter a card from a set of four representing the four options. Finally, players completed a questionnaire containing items on demographics, a measure of goal involvement that served as the manipulation check, and a measure of goal orientation. Goal orientations were assessed at the end of the experiment to prevent any influence on participants' responses to the manipulation.

The session concluded with a written and verbal debrief. General purposes of the study were communicated, and the experimenter probed for suspicion of being filmed. No one suspected that they had been filmed. Participants were then requested to give written consent to the use of video footage for data analysis. Everyone granted permission. Next, information was provided on the number of raffle tickets each player had earned. All participants received one ticket for participating. Those who accomplished their objective received two tickets regardless of what was stated in each manipulation. Finally, participants were asked not to reveal any details of the study to fellow students and were thanked for their time and effort.

## Results

### Preliminary Analyses

Preliminary analyses were conducted to clean up the data and examine the effectiveness of the experimental manipulation. First, missing values of items omitted in the questionnaires were replaced by mean scores. Next, assumptions of normality, linearity, and homogeneity of variance underlying multivariate analysis were examined. No serious violations of the assumptions were noted. In addition, no multicollinearity was present in the data: Correlations ranged from .03 to .11.

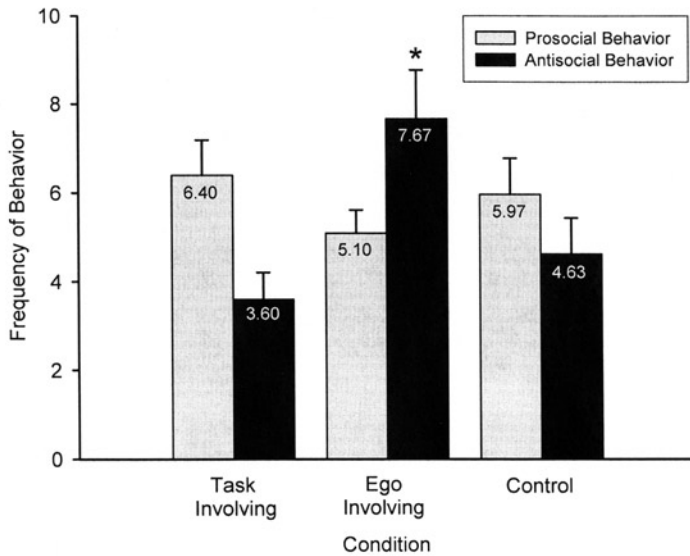
Finally, multivariate outliers were examined by comparing Mahalanobis distances with critical values (Tabachnick & Fidell, 2001a). Two cases were removed from further analysis as they exceeded the critical value for multivariate outliers,  $\chi^2(2, N = 90) = 13.82, p < .001$ .

In order to examine the effectiveness of the experimental manipulation, a one-way MANOVA was performed to determine differences among the three conditions in reported task and ego involvement. A significant multivariate main effect emerged, Wilks's lambda = .18,  $F(4, 172) = 58.80, p < .001$ , partial  $\eta^2 = .58$ .<sup>1</sup> Subsequent univariate ANOVAs indicated significant differences among the three conditions in perceptions of both task involvement,  $F(2, 87) = 74.80, p < .001$ , partial  $\eta^2 = .63$ , and ego involvement,  $F(2, 87) = 98.31, p < .001$ , partial  $\eta^2 = .69$ . Planned comparisons revealed that participants in the task-involving condition perceived this condition to be significantly more task involving ( $M = 4.42, SD = 0.41$ ) compared to participants exposed to either the ego-involving ( $p < .001; M = 2.87, SD = 0.67$ ) or the control conditions ( $p < .001; M = 2.78, SD = 0.64$ ). Similarly, participants exposed to the ego-involving condition perceived this condition to be significantly more ego involving ( $M = 4.51, SD = 0.44$ ) than did those in either the task-involving ( $p < .001; M = 2.41, SD = 0.68$ ) or the control conditions ( $p < .001; M = 3.47, SD = 0.59$ ). These results indicate that the experimental manipulation was successful.

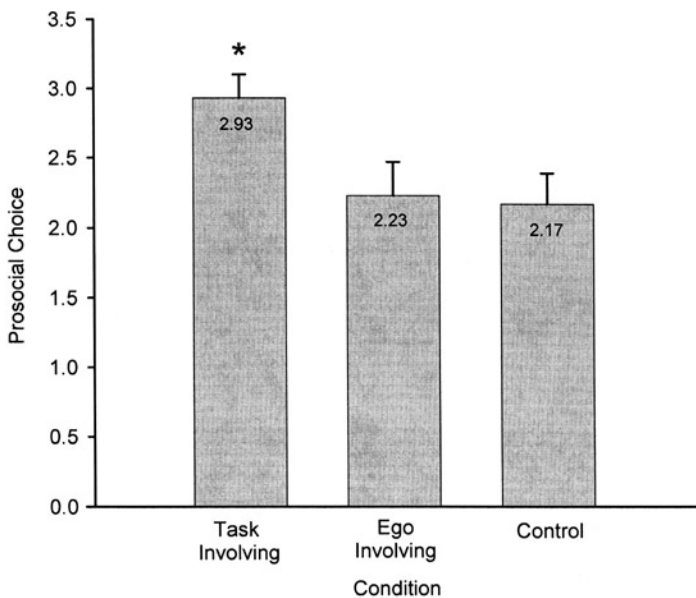
## Effects of Goal Involvement and Sex on Behavior

A 3 (Condition)  $\times$  2 (Sex) MANOVA was used to examine the effects of goal involvement and sex on prosocial choice and observed prosocial and antisocial behavior. Significant multivariate effects were found for both condition, Wilks's lambda = .77,  $F(6, 164) = 3.89, p = .001$ , partial  $\eta^2 = .13$ , and sex, Wilks's lambda = .89,  $F(3, 82) = 3.25, p = .03$ , partial  $\eta^2 = .11$ . Follow-up univariate ANOVAs indicated significant effects of condition on prosocial choice,  $F(2, 84) = 3.93, p = .02$ , partial  $\eta^2 = .09$ , and antisocial behavior,  $F(2, 84) = 6.87, p = .002$ , partial  $\eta^2 = .14$ . Planned comparisons showed that prosocial choice was significantly greater in the task-involving condition than both the ego-involving ( $p = .02$ ) and control conditions ( $p = .01$ ). In addition, participants in the ego-involving condition engaged in significantly more antisocial behaviors<sup>2</sup> than did those in the task-involving ( $p = .001$ ) and control conditions ( $p = .01$ ). Descriptive statistics for all dependent variables as a function of experimental condition are presented in Figures 1 and 2. With regard to sex, the only statistically significant finding was for prosocial behavior,  $F(1, 84) = 7.66, p = .01$ , partial  $\eta^2 = .08$ . Specifically, females engaged in more prosocial behaviors ( $M = 6.91, SD = 4.26$ ) than males ( $M = 4.73, SD = 3.29$ ). No other significant results were found.

Because goal orientations have been linked to morality in sport (Duda et al., 1991; Kavussanu & Roberts, 2001), we examined sex differences in prosocial behavior using a one-way ANCOVA with task and ego orientations as covariates. The purpose of this analysis was to examine sex differences in prosocial behavior after the scores of prosocial behavior were adjusted for differences associated with goal orientation (see Tabachnick & Fidell, 2001b). Essentially, with this analysis we examined whether sex differences in prosocial behavior would remain significant if males and females had the same scores in goal orientation. Prior to this analysis, the homogeneity of regression was tested by examining whether significant



**Figure 1** — Mean frequency (+SE) of prosocial and antisocial behaviors as a function of task ( $n = 30$ ), ego ( $n = 30$ ), and control ( $n = 30$ ) conditions. Scores ranged from 0 to 18 for prosocial behavior and 0 to 23 for antisocial behavior. An asterisk indicates that a mean value is significantly different from other groups' scores on the same outcome variable.



**Figure 2** — Mean frequency (+SE) of prosocial choice as a function of task ( $n = 30$ ), ego ( $n = 30$ ), and control ( $n = 30$ ) conditions. Scores ranged from 1 to 4. An asterisk indicates that a mean value is significantly different from other groups' scores.

interaction effects existed between the independent variable and the covariates. No significant interaction effects were found, supporting the homogeneity of regression assumption. ANCOVA indicated that previously identified sex differences in prosocial behavior remained significant after controlling for task and ego orientations,  $F(1, 86) = 4.99, p = .03$ , partial  $\eta^2 = .06$ . Even though sex differences remained significant, it is worth noting that there was a decrease in the significance level and effect size. These findings suggest that goal orientations had a small effect on sex differences in prosocial behavior.

## Discussion

The primary purpose of this study was to investigate the effects of task and ego involvement on moral behavior in an experimentally manipulated competitive setting. We also examined sex differences on moral behavior. Before discussing the findings as they pertain to each purpose, we should note that the experimental manipulation, as indicated by the manipulation check, was successful in inducing task and ego involvement under controlled conditions. In addition, observation of participants' behaviors revealed that both prosocial and antisocial behaviors occurred in the competitive setting. The occurrence of both types of behaviors supports Bandura's (1999) distinction of the proactive and inhibitive aspects of morality. In Bandura's (1999) view, moral conduct involves doing good things as well as refraining from doing bad things.

### Goal Involvement and Moral Behavior

**Prosocial Choice.** Consistent with our hypothesis, participants in the task-involving condition displayed higher prosocial choice than did those in the ego-involving and control conditions. On average, these participants donated approximately equal bonus goals to themselves and to their opponent. Participants in the ego-involving and control conditions tended to give themselves more bonus goals than they did to their opponent. These findings indicate that when motivated by learning and improvement, individuals adopt principles of fairness. In contrast, individuals who were motivated to outperform their opponent, or whose motivation had not been manipulated, displayed more egocentric behavior.

The significant difference in prosocial choice between the task-involving and the other two conditions may be partly attributed to the lower prosocial choices made by participants in the ego-involving and control conditions. This might have been the result of the nature of these conditions. Specifically, participants in the ego-involving condition were explicitly instructed to outperform their opponent; the inherent characteristics of the competitive game may have also resulted in competition between the players in the control condition. The competitive focus of the ego-involving and control conditions may have led to lower prosocial choices in these conditions. Indeed, Kleiber and Roberts (1981) have shown that engaging in a 2-week competitive tournament reduced prosocial behavior in children.

Our results are consistent with past research that has linked motivational and moral variables. Specifically, task orientation has been shown to predict prosocial behavior (Kavussanu, 2006), higher levels of moral functioning (Kavussanu & Ntoumanis, 2003), and sportpersonship (Dunn & Causgrove Dunn, 1999). Further,

perceptions of a mastery motivational climate have been positively associated with reported prosocial behavior (Kavussanu, 2006) and the sportspersonship dimensions of respect for opponents, social conventions, and rules and officials (Miller et al., 2004; Ommundsen et al., 2003). Taken together with past research, our findings suggest that task involvement can facilitate prosocial behavior and lead participants to make choices that reflect fairness.

**Observed Prosocial Behavior.** Contrary to our hypothesis and the finding for prosocial choice, no significant differences were revealed among the three conditions for observed prosocial behavior. One explanation for this finding is that the recorded prosocial behaviors might represent norms in sport. For example, it is generally expected that sport participants display positive social behaviors toward the opponent. If these behaviors are well established, it would be more difficult to influence their occurrence through a short experimental manipulation. However, this is a tentative explanation because, to our knowledge, no empirical data exist to document the prevalence of these specific behaviors in sport. It is also worth noting that the highest frequency of prosocial behaviors was among participants assigned to the task-involving condition. The difference among the three conditions, though, was small as indicated by the small effect size (partial  $\eta^2 = .02$ ). Consequently, the observed statistical power to detect significant differences was low (.21).

Even though goal involvement was hypothesized to affect both prosocial choice and observed prosocial behavior, the experimental manipulation clearly had a weaker effect on the latter variable. The discrepancy in these findings could be due to differences in the measurement of the two variables. Specifically, observed behaviors were measured during the entire game play, whereas the choices were made at the end of game play. Thus, observed behaviors were seen by the opponent whereas the choices were not. This could have influenced participants' responses. For instance, ego-involving and control condition individuals may have engaged in observed prosocial behaviors to appear friendly toward their opponent during game play but these appearances were not necessary when responses were confidential. Prosocial behaviors during game play clearly differ from behaviors at the end of the session when prosocial choices were made.

**Observed Antisocial Behavior.** In support of our hypothesis, individuals in the ego-involving condition demonstrated significantly more antisocial behaviors (e.g., taunting opponents and breaking the rules) than did those assigned to the other two conditions. Thus, playing table soccer with the explicit goal of doing better than one's opponent can lead participants to engage in significantly more antisocial behaviors than if the goal is to improve skills, or if goal involvement is not manipulated. These results are consistent with research that has reported a relationship between ego orientation and unsportsmanlike attitudes, legitimacy judgments, low levels of moral functioning, and antisocial behavior (e.g., Duda et al., 1991; Kavussanu, 2006; Kavussanu & Roberts, 2001; Sage et al., 2006). Further, perceptions of a performance motivational climate have been associated with antisocial behavior (Kavussanu, 2006) and low levels of moral functioning (e.g., Kavussanu & Spray, 2006; Ommundsen et al., 2003). Overall, our findings support past work and are consistent with Nicholls's (1989) claim that ego-oriented individuals prioritize superiority over issues of justice and fairness.

## Sex and Moral Behavior

A second purpose of this study was to examine sex differences in moral behavior. Males displayed less prosocial behavior than females, supporting our hypothesis. This finding is consistent with past research on sportsmanlike attitudes (Duda et al., 1991) and moral functioning (Kavussanu & Roberts, 2001) that has also identified sex differences on moral variables. Sex differences in prosocial behavior remained significant even when we controlled for goal orientation. Although there was a change in the significance level and effect size, our findings indicate that goal orientation has a very small effect on the prosocial behavior of male and female participants.

With regard to prosocial choice, no sex differences were identified on the number of goals awarded. Assessing prosocial behavior with a measure similar to the one used in this study for prosocial choice, Kleiber and Roberts (1981) reported lower prosocial behavior for boys than girls in a competitive sport setting. However, differences were found only in the last trial of 10 and the competitive condition lasted 2 weeks. Because sex differences in the Kleiber and Roberts (1981) study did not appear in the first 9 trials and that experiment lasted much longer than ours, it is possible that a longer competitive experience is necessary to reveal sex differences in prosocial choice. Perhaps men and women are largely similar in their altruistic tendencies, with men showing less altruism than women only after an intense competitive experience. Further work is required using this measure in a longer lasting intervention to determine potential sex differences.

Contrary to our hypothesis, no significant sex differences were found in antisocial behavior. Our finding is inconsistent with previous research that has reported sex differences on moral variables (e.g., Bredemeier, 1994; Duda et al., 1991; Kavussanu & Roberts, 2001). Two explanations are offered for this finding. First, sex differences on antisocial behavior may be more pronounced in the real-world sport context. Second, the recorded behaviors were different from the ones measured in past research. The behaviors we recorded were either verbal intimidation or cheating, whereas previous studies have generally included more extreme antisocial behaviors such as pushing or trying to injure an opponent (e.g., Kavussanu & Roberts, 2001). It is possible that males differ from females when more extreme behaviors are examined but not on milder antisocial behaviors.

## Limitations of the Study and Directions for Future Research

The present study was successful in experimentally manipulating motivational involvement to examine differences in moral behavior. However, our findings should be considered in light of the study's limitations. First, as with all laboratory-based studies, ecological validity is not as strong as it would have been in the field. Second, as the activity we used was the game of table soccer, our findings can be generalized only to similar activities. Third, all participants were sport and exercise science students to ensure that they were sports competitors. Consequently, our findings can only be generalized to a similar population. Finally, it is possible that the presence of the £50 cash prize introduced extrinsic motivation to participants. Although recent work suggests that intrinsic and extrinsic motivations are not mutually exclusive (Covington & Mueller, 2001), introducing extrinsic motivation could be considered a limitation of the study. Future research should



attempt to address these limitations by examining the effects of goal involvement on prosocial and antisocial behavior in other games and sports, selecting participants from other populations, and replicating the present findings with and without an extrinsic reward.

## Conclusion

In this study we experimentally manipulated goal involvement in a competitive setting and observed its effects on moral behavior. Although the research was conducted in a laboratory, the inclusion of a familiar and competitive game strengthened the ecological validity of the findings. Applying the current findings to a sporting context could help coaches and athletes counter the unsportsmanlike behaviors that are characteristic of highly competitive situations and promote the kind of character development that is beneficial to all sport participants.

## References

- Ajzen, I., & Fishbein, M. (1977). Attitude-behavior relations: A theoretical analysis and review of empirical research. *Psychological Bulletin*, 84, 888-918.
- Ames, C. (1992). Achievement goals, motivational climate, and motivational processes. In G.C. Roberts (Ed.), *Motivation in sport and exercise* (pp. 161-176). Champaign, IL: Human Kinetics.
- Ames, C., & Archer, J. (1988). Achievement goals in the classroom: Students' learning strategies and motivation processes. *Journal of Educational Psychology*, 80, 260-267.
- Bandura, A. (1991). Social cognitive theory of moral thought and action. In W.M. Kurtines & J.L. Gewirtz (Eds.), *Handbook of moral behavior and development: Theory, research, and applications* (Vol. 1, pp. 71-129). Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.
- Bandura, A. (1999). Moral disengagement in the perpetration of inhumanities. *Personality and Social Psychology Review*, 3, 193-209.
- Boixadós, M., Cruz, J., Torregrosa, M., & Valiente, L. (2004). Relationships among motivational climate, satisfaction, perceived ability, and fair play attitudes in young soccer players. *Journal of Applied Sport Psychology*, 16, 301-317.
- Bredemeier, B.J. (1983). Athletic aggression: A moral concern. In J. Goldstein (Ed.), *Sports violence* (pp. 47-82). New York: Springer-Verlag.
- Bredemeier, B.J.L. (1994). Children's moral reasoning and their assertive, aggressive, and submissive tendencies in sport and daily life. *Journal of Sport & Exercise Psychology*, 16, 1-14.
- Bredemeier, B.J.L., & Shields, D.L. (1986). Athletic aggression: An issue of contextual morality. *Sociology of Sport Journal*, 3, 15-28.
- Bredemeier, B.J.L., Weiss, M.R., Shields, D.L., & Cooper, B. (1986). The relationship of sport involvement with children's moral reasoning and aggression tendencies. *Journal of Sport Psychology*, 8, 304-318.
- Cohen, J. (1992). A power primer. *Psychological Bulletin*, 112(1), 155-159.
- Covington, M.V., & Mueller, K.J. (2001). Intrinsic versus extrinsic motivation: An approach/avoidance reformulation. *Educational Psychology Review*, 13, 157-176.
- Duda, J.L., Olson, L.K., & Templin, T.J. (1991). The relationship of task and ego orientation to sportsmanship attitudes and the perceived legitimacy of injurious acts. *Research Quarterly for Exercise and Sport*, 62, 79-87.
- Dunn, J.G.H., & Causgrove Dunn, J.C. (1999). Goal orientations, perceptions of aggression, and sportpersonship in elite male ice hockey players. *The Sport Psychologist*, 13, 183-200.

- Eisenberg, N., & Fabes, R.A. (1998). Prosocial development. In N. Eisenberg (Ed.), *Handbook of child psychology. Vol 3: Social, emotional, and personality development* (pp. 701-778). New York: Wiley.
- Elliot, A.J. (2005). A conceptual history of the achievement goal construct. In A.J. Elliot & C.S. Dweck (Eds.), *Handbook of competence and motivation*. New York: The Guilford Press.
- Gano-Overway, L.A., Guivernau, M., Magyar, M., Waldron, J.J., & Ewing, M.E. (2005). Achievement goal perspectives, perceptions of the motivational climate, and sportspersonship: individual and team effects. *Psychology of Sport and Exercise*, 6, 215-232.
- Gibbons, S.L., & Ebbeck, V. (1997). The effect of different teaching strategies on the moral development of physical education students. *Journal of Teaching in Physical Education*, 17, 85-98.
- Gibbons, S.L., Ebbeck, V., & Weiss, M.R. (1995). Fair play for kids: Effects on the moral development of children in physical education. *Research Quarterly for Exercise and Sport*, 66, 247-255.
- Jones, E.E., & Pittman, T.S. (1982). Toward a general theory of strategic self-presentation. In J. Suls (Ed.), *Psychological perspectives on the self* (pp. 231-262). Hillsdale, NJ: Erlbaum.
- Jones, M.V., Bray, S.R., & Olivier, S. (2005). Game location and aggression in rugby league. *Journal of Sports Sciences*, 23, 387-393.
- Kavussanu, M. (2006). Motivational predictors of prosocial and antisocial behaviour in football. *Journal of Sports Sciences*, 24, 575-588.
- Kavussanu, M., & Ntoumanis, N. (2003). Participation in sport and moral functioning: Does ego orientation mediate their relationship? *Journal of Sport & Exercise Psychology*, 25, 501-518.
- Kavussanu, M., & Roberts, G.C. (2001). Moral functioning in sport: An achievement goal perspective. *Journal of Sport & Exercise Psychology*, 23, 37-54.
- Kavussanu, M., Roberts, G.C., & Ntoumanis, N. (2002). Contextual influences on moral functioning of college basketball players. *The Sport Psychologist*, 16, 347-367.
- Kavussanu, M., Seal, A.R., & Phillips, D.R. (2006). Observed prosocial and antisocial behaviors in male soccer teams: Age differences across adolescence and the role of motivational variables. *Journal of Applied Sport Psychology*, 18, 326-344.
- Kavussanu, M., & Spray, C.M. (2006). Contextual influences on moral functioning of male youth footballers. *The Sport Psychologist*, 20, 1-23.
- Kirker, B., Tenenbaum, G., & Mattson, J. (2000). An investigation of the dynamics of aggression: Direct observations in ice hockey and basketball. *Research Quarterly for Exercise and Sport*, 71, 373-386.
- Kleiber, D.A., & Roberts, G.C. (1981). The effects of sport experience in the development of social character: An exploratory investigation. *Journal of Sport Psychology*, 3, 114-122.
- Knight, G.P., & Kagen, S. (1977). Development of prosocial and competitive behaviors in Anglo-American and Mexican-American children. *Child Development*, 6, 1385-1394.
- Lemyre, P.N., Roberts, G.C., & Ommundsen, Y. (2002). Achievement goal orientations, perceived ability, and sportspersonship in youth soccer. *Journal of Applied Sport Psychology*, 14, 120 - 136.
- Miller, B.W., Roberts, G.C., & Ommundsen, Y. (2004). Effect of motivational climate on sportspersonship among competitive youth male and female football players. *Scandinavian Journal of Medicine and Science in Sports*, 14, 193-202.
- Newton, M., Duda, J.L., & Yin, Z.N. (2000). Examination of the psychometric properties of the Perceived Motivational Climate in Sport Questionnaire-2 in a sample of female athletes. *Journal of Sports Sciences*, 18, 275-290.

- Nicholls, J.G. (1989). *The competitive ethos and democratic education*. Cambridge, MA: Harvard University Press.
- Ommundsen, Y., Roberts, G.C., Lemyre, P.N., & Treasure, D. (2003). Perceived motivational climate in male youth soccer: Relations to social-moral functioning, sportspersonship and team norm perceptions. *Psychology of Sport and Exercise*, 4, 397-413.
- Roberts, G.C., Treasure, D.C., & Balague, G. (1998). Achievement goals in sport: The development and validation of the Perception of Success Questionnaire. *Journal of Sports Sciences*, 16, 337-347.
- Sage, L.D., Kavussanu, M., & Duda, J.L. (2006). Goal orientations and moral identity as predictors of prosocial and antisocial functioning in male association football players. *Journal of Sports Sciences*, 24, 455-466.
- Sheldon, J.P., & Aimar, C.M. (2001). The role aggression plays in successful and unsuccessful ice hockey behaviors. *Research Quarterly for Exercise and Sport*, 72, 304-309.
- Standage, M., Duda, J.L., & Pensgaard, A.M. (2005). The effect of competitive outcome and task-involving, ego-involving, and co-operative structures on the psychological well-being of individuals engaged in a co-ordination task. *Motivation and Emotion*, 29, 41-68.
- Tabachnick, B.G., & Fidell, L.S. (2001a). *Using multivariate statistics* (4th ed.). NY: HarperCollins.
- Tabachnick, B.G., & Fidell, L.S. (2001b). *Computer-assisted research design and analysis*. Needham Heights, MA: Allyn & Bacon.
- Vallerand, R.J. (1997). Toward a hierarchical model of intrinsic and extrinsic motivation. *Advances in Experimental Social Psychology*, 29, 271-360.

*Manuscript submitted:* March 13, 2006

*Revision accepted:* November 25, 2006

## Notes

1. The strength of association (i.e., effect size) between a factor and a dependent variable in ANOVA is indicated by  $\eta^2$ , which is equal to  $R^2$  (Tabachnick & Fidell, 2001b) and represents the proportion of total variation in the dependent variable attributable to the factor. Values of .02, .13, and .26 for  $R^2$  represent small, medium, and large effect sizes, respectively (Cohen, 1992). However, these guidelines should be viewed as approximate because in this study we reported partial  $\eta^2$  as an estimate of effect size. Partial  $\eta^2$  represents the proportion of total variation attributable to the factor, *after* the influence of other factors has been eliminated, and is recommended as a measure of effect size in multifactor designs (Tabachnick & Fidell, 2001b).
2. When verbal and physical behaviors were separately examined, antisocial *physical* behaviors were significantly more frequent in the ego-involving than in the task-involving and control conditions,  $F(2, 84) = 6.07, p = .003$ , partial  $\eta^2 = .13$ . The three conditions did not differ significantly on the frequency of antisocial verbal, prosocial verbal, or prosocial physical behaviors.